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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,557	12/22/2000	Chaiwat Oottamakorn	9432-000129	3401

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EXAMINER

KLINGER, SCOTT M

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/748,557

Applicant(s)

OOTTAMAKORN ET AL.

Examiner

Scott M. Klinger

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-14 are pending.

Response to Arguments

Note: Applicant's remarks are in **bold** type. Responses to applicant's remarks are indented.

Claim 1 recites, *"determining a first effective envelope associated with arriving traffic entering said network"* and *"determining a second effective envelope associated with admitted traffic currently in said network."* Park does not disclose such a structure. The Examiner alleges that the language *"switch 50 in the unit of a measuring interval and for measuring an average cell rate with respect to the entirety of the connections in the unit of an output link 60"* discloses the recited structure. However, this is not analogous to determining a first envelope associated with arriving traffic and a second envelope associated with admitted traffic. In contrast, the measuring mechanism 40 determines a single value associated with traffic. Therefore, acceptance mechanism 20 is not *"admitting traffic if the sum of the first and second effective envelopes is less than or equal to said service curve."* Applicants respectfully submit that claim 1, as well as its corresponding dependent claims, should be in condition of allowance.

Applicant's arguments, see above, with respect to the rejection(s) of claim(s) 1 and 11 under 35 U.S.C. 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made under 35 U.S.C. 103(a) as being unpatentable over Park.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (U.S. Patent Number 5,872,771, hereinafter "Park"). Park discloses an adaptive connection admission control method using traffic measurement and estimation. Park shows estimating the cell loss rate of the connections to the network and comparing them to a target cell loss rate. The system of Park does not explicitly show a first envelope associated with incoming traffic, a second envelope associated with current traffic, and a service curve associated with departing traffic. However, all three of these values are used in determining if a connection will be accepted. The cell loss rate is calculated by measuring the number of cells passing through the output link and by using the current connections.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of simplifying the system of Park so as to keep the sum of incoming traffic and current traffic lower than outgoing traffic, in order to guarantee quality of service and avoid creating a bottleneck.

In referring to claim 12, Park shows,

- Said information system is a multi-port switch:

"To accomplish the object of the present invention, an adaptive connection admission control method in an Asynchronous Transfer Mode switching system" (Park, col. 1, lines 49-51)

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Claims 2-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Liebeherr et al. ("Effective Envelopes: Statistical Bounds on Multiplexed Traffic in Packet Networks", hereinafter "Liebeherr").

In referring to claim 2, although Park shows substantial features of the claimed invention, including the network of claim 1 (see 102 rejection above), Park does not show said first and second envelopes are global effective envelopes. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Park as evidenced by Liebeherr.

In analogous art, Liebeherr discloses a statistical service that makes probabilistic service guarantees. Liebeherr shows said first and second envelopes are global effective envelopes: Liebeherr, page 1224, section II B shows an equation for a global effective envelopes, "*Global effective envelopes ... are bounds for the arrivals in all subintervals ... of a larger interval [than local effective envelopes]*" (Liebeherr, page 1224, section II B)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use global effective envelopes, such as taught by Liebeherr, in order to "*exploit statistical multiplexing without assuming a specific source model.*" (Liebeherr, page 1223, section I)

In referring to claim 3, Park in view of Liebeherr shows,

- Said second envelope is a global effective envelope determined as a function of the measured average and variance of the aggregate traffic:

Liebeherr, page 1224, section II B shows an equation for a global effective envelopes in which the global effective envelope is a function of the measured average and variance of the aggregate traffic

In referring to claim 4, although Park shows substantial features of the claimed invention, including the network of claim 1 (see 102 rejection above), Park does not show said first and second envelopes are global effective envelopes. Nonetheless this feature is well known in the

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art and would have been an obvious modification to the system disclosed by Park as evidenced by Liebeherr.

In analogous art, Liebeherr discloses a statistical service that makes probabilistic service guarantees. Liebeherr shows said first and second envelopes are global effective envelopes: Liebeherr, page 1224, section II B shows an equation for a local effective envelopes, "*A local effective envelope provides a bound for the aggregate arrivals ... for any specific ('local') time interval ...*" (Liebeherr, page 1224, section II B)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use local effective envelopes, such as taught by Liebeherr, in order to "*exploit statistical multiplexing without assuming a specific source model.*" (Liebeherr, page 1223, section I)

In referring to claim 5, Park in view of Liebeherr shows,

- Said second envelope is a local effective envelope determined as a function of the measured average and variance of the aggregate traffic:

Liebeherr, page 1224, section II B shows an equation for a local effective envelopes in which the local effective envelope is a function of the measured average and variance of the aggregate traffic

In referring to claim 6, Park in view of Liebeherr shows,

- Said first effective envelope is based on the aggregate of arriving traffic:

Liebeherr, page 1224, section II B shows an equation for a local effective envelopes, "*A local effective envelope provides a bound for the aggregate arrivals ... for any specific ('local') time interval ...*" (Liebeherr, page 1224, section II B)

In referring to claim 7, Park in view of Liebeherr shows,

- Said aggregate is determined by measuring an aggregate arrival flow at plural time intervals and by calculating the average and variance:

Liebeherr, page 1224, section II B shows an equation for a global effective envelopes, *“Global effective envelopes ... are bounds for the arrivals in all subintervals ... of a larger interval [than local effective envelopes]”* (Liebeherr, page 1224, section II B)

In referring to claim 8, Park in view of Liebeherr shows,

- Said second effective envelope is recursively calculated:

Liebeherr, page 1224, section II B shows, “there exists a smallest local effective envelope, since the minimum of the two local effective envelopes is again such an envelope”, and can therefore be calculated recursively

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Cruz et al. (“Scheduling for Quality of Service Guarantees via Service Curves”, hereinafter “Cruz”). Although Park shows substantial features of the claimed invention, Park does not show said service curve is determined by developing a list of pairs representing the amount of time required to service one packet of information (packet delay) and the number of backlogged packets of information and using said list to determine a bounded service envelope. Nonetheless this feature is well known in the art and would have been an obvious modification to the system disclosed by Park as evidenced by Cruz.

In analogous art, Cruz discloses using service curves for quality of service guarantees. Cruz shows said service curve is determined by developing a list of pairs representing the amount of time required to service one packet of information and the number of backlogged packets of information and using said list to determine a bounded service envelope: Cruz, Page 513, column 2, Definition 1 shows there exists a service curve based on the backlog and the time it takes to service a packet.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the network of Park so as to use a service curve based on the backlog and time it takes to service a packet (packet delay), such as taught by Cruz, in

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order to *"efficiently allocate limited network resources to many connections by promoting sharing while also providing quality of service for each connection"* (Cruz, page 512, section 1).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Mo et al. (6693909, hereinafter "Mo"). Although Park shows substantial features of the claimed invention, including the system of claim 1 (see 102 rejection above), Park does not show explicitly show said information system is an autonomous network. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Park as evidenced by Mo.

In analogous art, Mo discloses a method and system for transporting traffic in a packet-switched network. Mo shows: *"FIG. 2 illustrates details of the transport router 60 in accordance with one embodiment of the present invention. In this embodiment, the transport router 60 comprises a simple port group and acts as a single network element within a customer's autonomous network."* (Mo, col. 5, lines 58-62)

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Park so as to provide access control on an autonomous network, such as taught by Mo, in order to guarantee the quality of service on an autonomous network.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor (U.S. Patent Number 5,664,170, hereinafter "Taylor") in view of Park. Although Park shows substantial features of the claimed invention, including the system of claim 1 (see 102 rejection above), Park does not show explicitly show said information system is a computer network domain. Nonetheless this feature is well known in the art and would have been an obvious implementation of the system disclosed by Park as evidenced by Taylor.

In analogous art, Taylor discloses a flexible distributed network database containing configuration information for a network divided into domains. Taylor Figure 3 shows a view of

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a computer network domain.

Given these teachings, a person of ordinary skill in the art would have readily recognized the desirability and advantages of implementing the system of Park so as to provide access control on a computer network domain, such as taught by Taylor, in order to guarantee the quality of service on a computer network domain.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Klinger whose telephone number is (703) 305-8285. The examiner can normally be reached on M-F 7:00am - 3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Scott M. Klinger
Examiner
Art Unit 2153

smk


FRANTZ B. JEAN
PRIMARY EXAMINER